

Appendix I

Paladin Howitzer Section Evaluation

This section evaluation is offered as a guide. Paladin units can modify it to fit specific training needs.

SECTION EVALUATION SCORE SHEET

Section/Battery	_____		
Date	_____		
Chief of Section	_____		
Score	_____		

<u>Phase</u>	<u>Task Description</u>	<u>Maximum Allowable Points</u>	<u>Points Awarded</u>
I	Written Test (30 questions at 2 points each, developed by the unit. Responsibility of the master gunner. See sample in Phase I)	(60)	_____
II	Preparation for Firing Operations (Tactical Assembly Area Operations)	(225)	
	1. PMCS/PCI	80	_____
	2. Disassemble Breech	25	_____
	3. Assemble Breech	25	_____
	4. Micrometer Test	25	_____
	5. End for End Test	25	_____
	6. Weapons	15	_____
	7. AFCS Initialization	30	_____
	Total Points Awarded for Phase II		_____
III	Occupation	(456)	
	8. Tactical Move	20	_____
	9. Emergency Mission	51	_____
	10. Deliberate Occupation	100	_____
	11. Fire Missions	200	_____
	12. Misfire Procedures	30	_____
	13. Survivability Move	55	_____
	Total Points Awarded for Phase III		_____

Continued

SECTION EVALUATION SCORE SHEET (CONTINUED)

<u>Phase</u>	<u>Task Description</u>	<u>Maximum Allowable Points</u>	<u>Points</u>
IV	Degraded Operations	(230)	_____
	14. Occupation	80	_____
	15. Use of Conveyor	10	_____
	16. Fire Missions	100	_____
	17. Direct Fire	40	_____
	Total Points Awarded for Phase IV		_____
V	NBC Operations	(55)	_____
	18. Assume MOPP4	10	_____
	19. Occupation	20	_____
	20. Fire Mission	15	_____
	21. M256 Kit	10	_____
	Total Points Awarded for Phase V		_____
VI	Night Operations	(130)	_____
	22. Occupation	30	_____
	23. Night Operations	100	_____
	Maximum Point Total	(1156)	_____
	Section Total		_____

PHASE I: SAMPLE WRITTEN TEST

I-1. The test consists of 30 multiple choice and true/false questions worth 2 points each for a maximum score of 60 points.

1. WHAT IS THE NUMBER 1 MAN'S FIRST ACTION WHEN CHECKFIRE IS CALLED, AND A ROUND IS IN THE TUBE?
 - A. ATTEMPT TO FIRE TWO ADDITIONAL TIMES
 - B. CEASE ALL ACTIONS AND ANNOUNCE CHECKFIRE
 - C. CALL HIMSELF OUT OF THE MISSION
 - D. ALL OF THE ABOVE
2. DURING FIRE MISSIONS, PRIOR TO FIRING, WHAT MUST BE DONE WITH UNUSED POWDER INCREMENTS?
 - A. THEY MUST BE STORED IN THE POWDER PIT
 - B. THEY ARE STORED IN THE PROPELLANT CANISTER WITH THE LID SECURED
 - C. INCREMENTS ARE HANDED OUT THE SIDE WINDOW AND STORED IN THE AMMUNITION VEHICLE
 - D. ALL OF THE ABOVE
3. THE COS KNOWS HIS NAVIGATION SUBSYSTEM IS BEING PLGR AIDED WHEN _____.
 - A. THE "A" IS DISPLAYED IN FIELD # 7 ON THE DISPLAY
 - B. THE "A" IS NOT DISPLAYED IN FIELD # 7 ON THE DISPLAY
 - C. FIELD # 7 DISPLAYS "CMD"
 - D. NONE OF THE ABOVE
4. THE LEAD FILTER INTAKE SYSTEM MUST BE USED _____.
 - A. WHILE FIRING SMOKE ROUNDS
 - B. WHEN FIRING THE M203 CHARGE
 - C. NOT NECESSARY TO USE AT TEMPERATURES LESS THAN 60 DEGREES
 - D. DURING ALL FIRING
5. DURING A "FIRE WHEN READY" FIRE MISSION, THE ONLY WHITE SOFT KEY LABELS THAT WILL BE AVAILABLE ARE _____, _____ AND _____.
 - A. READY, INVENTORY, AND ABORT
 - B. SHOT, CLEAR, AND EOM
 - C. SHOT, CHECK, AND ABORT
 - D. NONE OF THE ABOVE
6. _____ MUST BE ENTERED INTO THE AFCS AS THE LOADING ELEVATION.
 - A. MAX QE ON THE SAFETY-T
 - B. MIN QE ON THE SAFETY-T
 - C. 299 MILS
 - D. NONE OF THE ABOVE
7. THE "MAX ELEVATION MENU" HAS THREE AVAILABLE ENTRY OPTIONS. WHICH OPTION IS USED TO INPUT THE MAX QE FROM THE SAFETY-T?
 - A. USE TUBE POSITION
 - C. MAX QE ENTRY

- B. TYPE NEW VALUE
D. USE DEFAULT VALUE (1333)
8. THE TOLERANCE FOR DIRECTION VERIFICATION WITH THE M2 COMPASS IS_____MILS.
- A. 50 MILS
B. 10 MILS
C. 100 MILS
D. 20 MILS
9. WHEN SHOULD THE PROPELLANT TEMPERATURE BE UPDATED INTO THE AFCS?
- A. AT LEAST EVERY 2 HOURS
B. ONLY DURING INITIALIZATION
C. EVERY 20 MINUTES
D. ONLY WHEN DIRECTED BY POC
10. WHEN CONDUCTING DIRECTION VERIFICATION WITH THE M2 COMPASS, THE MEASURED AZIMUTH SHOULD BE COMPARED TO_____ON THE DISPLAY.
- A. THE "AOF"
B. THE "GUN TARGET LINE"
C. THE "HEADING" ON THE DISPLAY
D. NONE OF THE ABOVE
11. THE M577A1 FUZE MAY BE USED ON THE M107 HE PROJECTILE, SET AT PD ACTION.
- A. TRUE
B. FALSE
12. IAW FM 3-09.70, A VERIFICATION MISSION MUST BE CONDUCTED WHEN_____.
- A. AFTER INITIALIZATION
B. DURING LIVE FIRE
C. WHEN THERE IS A SIGNIFICANT CHANGE IN THE DATABASE
D. BOTH A. AND C.
E. NONE OF THE ABOVE
13. DURING A HIPSHOOT THE COS MUST VERIFY HIS IMMEDIATE CREST BY PRESSING THE_____KEY ON THE DISPLAY.
- A. "ARRIVE" KEY
B. "ACK" KEY
C. "LOAD" KEY
D. "LAY" KEY
14. DURING AFCS FIRE MISSIONS, PRIOR TO ANNOUNCING THE COMMAND TO FIRE, THE COS MUST VERIFY THAT THE ACTUAL AND COMMANDED DF AND QE ARE WITHIN TOLERANCE, THE LAY KEY IS BACKLIT, AND_____.
- A. THE TRAVEL LOCK IS UP
B. THE GUN-DRIVE SERVO LIGHT IS LIT
C. THE PROMPT "WARNING TUBE IS NOT IN LAY POSITION" IS NOT DISPLAYED
D. ALL OF THE ABOVE
15. YOU ARE THE NUMBER 1 MAN FOR 3RD SECTION FIRING A TWO ROUND WHEN READY FIRE MISSION. ON THE SECOND ROUND BEING FIRED, THE PRIMER DID NOT FIRE. YOU HAVE ANNOUNCED MISFIRE TO THE COS. HOW LONG DOES THE

SECTION HAVE TO FIRE THE ROUND AFTER THE ROUND WAS CHAMBERED? (THE TUBE IS WARM.)

16. THE ALERT "OK TO SHOOT OR MOVE" INDICATES NAVIGATION ALIGNMENT HAS REACHED_____.

- A. 0 MILS ACCURACY
- B. A FULL 15 MINUTE ALIGNMENT
- C. 1 MIL ACCURACY
- D. 10 METER ACCURACY

17. IN FIELD # 2, "MISSION STATUS" WHICH OF THE FOLLOWING MAY APPEAR?

- A. ALN_____S
- B. MOVE ORDER
- C. FIRE MISSION
- D. ALL OF THE ABOVE

18. THE MAXIMUM ALLOWABLE RADIUS IN A FIRING AREA IS 250 METERS.

- A. TRUE
- B. FALSE

19. THERE ARE _____ OPERATIONAL MODES FOR THE AFCS "AUTOMATIC FIRE CONTROL SYSTEM.

- A. NORMAL
- B. 2
- C. 3
- D. 1

20. THE GPS/PLGR BATTERY MUST BE REMOVED PRIOR TO_____.

- A. CONDUCTING FIRE MISSIONS
- B. CONNECTING TO VEHICLE POWER
- C. LAYING THE GUN
- D. PERFORMING A ZUPT

21. THE DOTTED LINE ON THE "EMPLACE FIRE AREA/POINT" SCREEN REPRESENTS_____.

- A. CURRENT HEADING
- B. FAULTY PIXELS ON THE DISPLAY
- C. DESIRED HEADING
- D. GUN-TARGET LINE FOR FPF/PRI

22. ANYONE THAT SEES AN UNSAFE ACT SHOULD CALL CHECK-FIRE.

- A. TRUE
- B. FALSE

23. WHAT DATA MUST BE ENTERED INTO THE AFCS "DIRECT FIRE SCREEN", FOR CONDUCTING DIRECT FIRE.

- A. DEFLECTION/QUADRANT
- B. RANGE/QUADRANT
- C. ELEVATION/RANGE
- D. RANGE/ UP/DOWN

24. WHEN THE COS PRESSES THE LOAD KEY ON THE DISPLAY, THE HOWITZER TUBE WILL_____.

- A. AUTOMATICALLY MOVE TO THE AOF (BASE DEFLECTION) AND THE PREDETERMINED ELEVATION.
- B. MOVE TO THE LOAD ELEVATION ONLY.

- C. MOVE TO THE PREDETERMINED LOAD ELEVATION, THE AOF (BASE DEFLECTION), AND/OR THE COMMANDED DEFLECTION
- D. NONE OF THE ABOVE

25. THE CHIEF OF SECTION'S FIRST ACTION WHEN HIS HOWITZER BECOMES DEGRADED IS TO_____.

- A. CALL HIMSELF OUT
- B. GO TO AN SCP POINT
- C. NOTIFY POC
- D. DISREGUARD AND CONTINUE

26. A BCS DATA XFER, "PIECE STATUS" MUST BE SENT TO THE POC ON ALL OCCUPATIONS.

- A. TRUE
- B. FALSE

27. WHICH OF THE BELOW LISTED ARE THE PREFIRE CHECKS THAT MUST BE DONE PRIOR TO FIRING.

- A. LOW VOLTAGE, RAMMER, TUBE, BREECH ASSEMBLY, RECUPERATOR, AND REPLINISHER.
- B. LOW VOLTAGE, TUBE, BREECH, AND RECUPERATOR.
- C. LOW VOLTAGE, RAMMER, TUBE, BREECH ASSEMBLY, RECUPERATOR, REPLINISHER, AND THE DA FORM 4513.
- D. NONE OF THE ABOVE

28. THE FOLLOWING FUZES ARE FIRED WITH THE M107 DEEP CAVITY HE PROJECTILE.

- A. M557, M739, M564, M582, M577, M732
- B. M557, M379, M564, M582, M565, M728
- C. M557, M739, M565, M577, M728, M732
- D. M557, M739, M564, M582, M728, M732

29. YOUR PLATOON SERGEANT HAS DIRECTED YOU TO CONDUCT HOWITZER CONFIDENCE TEST FOR DIRECTION VERIFICATION WITH SURVEY CONTROL AND AN AZIMUTH TO A KNOWN POINT. WHAT IS THE TOLERANCE FOR THIS TEST IN MILS?

- A. 0 MILS
- B. 2 MILS
- C. 1 MIL
- D. 5 MILS

30. EXPLAIN THE PROPER WAY TO MATE AND TIGHTEN A FUZE TO A PROJECTILE.

PHASE II: PREPARATION FOR FIRING OPERATIONS

TASK 1: PREPARATION FOR DELIBERATE OCCUPATION OF FIRING POSITION

Conditions

I-2. The section is in the tactical assembly area (TAA). The evaluator will read the following: Your section is preparing to leave the TAA for a deliberate occupation. The advance party will depart in 15 minutes. Your platoon sergeant has informed you that the main body will depart in 45 minutes and that your section should make all necessary preparations for movement to include before operations checks and services on the howitzer and FAASV.

Standards

I-3. Perform before operations checks and services on howitzer and FAASV. Load and stow equipment, and check personnel and equipment as outlined in TM or according to unit SOP as applicable. NOTE: 1SG will check blocks 1 and 2 during the section competition.

Evaluation

Evaluation Check List	Go	No Go
1. Did the section have all section equipment installed or stowed IAW applicable manuals and unit load plans, and did section members have all required individual clothing and equipment?		
2. Were all necessary items on hand for performing PMCS on the howitzer and the FAASV (i.e., BII, operator's manuals, lubrication order, DA Form 5988-E <i>Equipment Inspection and Maintenance Worksheet</i> , log books, and cleaning materials?		
3. Were the headings of the DA Form 5988-Es properly completed for the conduct of before PMCS?		
4. Did the COS use all members present to conduct the inspection?		
5. Did the section inspect each item in the before column of the PMCS table in the operator's manual?		
6. Did the section members perform PMCS in an orderly manner with a minimum of supervision?		
7. Did the section use the DA Form 5988-E to list all faults that were not already listed under uncorrected faults that they could not correct?		
8. Was the section ready to depart the TAA within the time briefed by the PLT SGT?		

Scoring

I-4. 25 points each will be awarded for a "go" rating in blocks 1 and 2. 5 points each will be awarded for a "go" in blocks 3 through 8. For each "no go" rating, 0 points will be awarded.

TASK 2: DISASSEMBLY OF BREECH MECHANISM**Conditions**

I-5. After giving the howitzer section approximately 45 minutes to complete Task 1, the evaluator reads the following situation to the COS:

I-6. During the conduct of the before operation checks and services on your cannon, you noted a malfunction in the breech mechanism. To troubleshoot the exact cause, you decide that you must disassemble the breech mechanism. You may select any member(s) of your section to perform this task. However, you may not physically perform any action. You have 1 minute to select the section member(s) to perform this task and assemble all required tools and manuals. At the end of 1 minute, the evaluator gives the following instructions to the section member(s) performing the task:

Standards

I-7. Disassemble breech, firing mechanism and obturator group as outlined in TM without error. Perform all actions in a safe manner without damage to equipment or injury to personnel. "ARE YOU READY?...GO".

Evaluation

Evaluation Check List	Go	No Go
1. Was the breechblock, obturator group, and firing mechanism disassembled IAW the appropriate operator's manual?		
2. Was the operation performed in the prescribed safe manner?		

Scoring

I-8. If a "go" rating is awarded, the disassembly will be graded according to speed of execution as outlined in the table below. If a "no go" rating is awarded, 0 points will be awarded for the entire task.

Time In Minutes	Points
0-3:45	25
3:46-4:05	15
4:06-4:20	10
4:21-8:00	5
8:01 or above	0

TASK 3: ASSEMBLY OF BREECH MECHANISM**Conditions**

I-9. After evaluating Task 2, the evaluator reads the following to the COS and the section members previously selected for disassembly of the breech:

Standards

I-10. Reassemble breech, firing mechanism and obturator group as outlined in TM without error. Perform all actions in a safe manner without damage to equipment or injury to personnel. "ARE YOU READY?...GO".

Evaluation

Evaluation Check List	Go	No Go
1. Was the breech mechanism properly assembled IAW the appropriate operator's manual?		
2. Was the operation performed in the prescribed safe manner?		

Scoring

I-11. If a "go" rating is awarded, the assembly will be graded according to speed of execution as outlined in the table below. If a "no go" rating is awarded, 0 points will be awarded for the entire task.

Time In Minutes	Points
0-4:15	25
4:16-4:35	15
4:36-4:50	10
4:51-12:00	5
12:01 or above	0

TASK 4: PERFORMANCE OF MICROMETER TEST ON THE GUNNER'S QUADRANT**Conditions**

I-12. After evaluating Task 3, the evaluator reads the following to the howitzer COS:

I-13. Because of recent firing inaccuracies, the platoon leader has told each howitzer section to perform the micrometer and end-for-end tests on its gunner's quadrants. You (or any member of your section) will perform the micrometer test and announce any error and corrective action. After the micrometer test, do not remove the gunner's quadrant from the breech until told to do so by the evaluator.

Standards

I-14. Perform micrometer test on the gunner's quadrant as outlined in the TM without error. "ARE YOU READY?...GO".

Evaluation

Evaluation Check List	Go	No Go
1. Did the soldiers follow the correct procedures in performing the micrometer test?		
2. Was the soldier able to determine if the micrometer knob was or was not in error and the action to be taken if it was in error?		

Scoring

I-15. If all "go" ratings are awarded, the score will be determined by the speed of execution as outlined in the table below. If a "no go" rating is awarded, 0 points will be awarded for the entire task.

Time In Seconds	Points
0-30	25
31-40	15
41-50	10
51-60	5
61 or above	0

TASK 5: PERFORMANCE OF THE END-FOR-END TEST**Conditions**

I-16. After evaluating Task 4, the evaluator reads the following to the COS:

I-17. Now that the micrometer test has been done, you (or any member of your section) will perform the end-for-end test on your gunner's quadrant. At the conclusion of the test:

- Leave the gunner's quadrant on the breech
- Announce the error to the evaluator
- Announce to the evaluator if the gunner's quadrant is serviceable or unserviceable

Standards

I-18. Perform end-for-end test on the gunner's quadrant as outlined in the TM without error. "ARE YOU READY?...GO".

Evaluation

Evaluation Check List	Go	No Go
1. Did the soldier follow the correct procedures in performing the end-for-end test?		
2. Was the correct quadrant error announced?		
3. Was the quadrant declared unserviceable if the error exceeded + or - 0.4 mil, or declared serviceable if the error was 0.4 mil or less?		

Scoring

I-19. If all "go" ratings were awarded, the score for the task will be determined by the speed of execution as outlined in the table below. If a "no go" is awarded, 0 points will be awarded for the entire task.

Time In Minutes	Points
0:00-1:00	25
1:01-1:20	20
1:21-1:30	15
1:31-1:40	10
1:41-1:50	5
1:51-2:00	2
2:01 or above	0

TASK 6: CREW SERVED AND INDIVIDUAL WEAPONS

Conditions

I-20. Prior to departing the TAA, the platoon leader informs the chiefs to check all crew and individual weapons for proper functioning.

Standards

I-21. Perform functions check of individual and crew served weapons without error IAW applicable TMs. Perform head space and timing check on M2 machine guns without error IAW applicable TM.

Evaluation

Evaluation Check List	Go	No Go
1. Was the head space properly set on both M2 machine guns?		
2. Was the timing properly set on both M2 machine guns?		
3. Did the section members properly conduct a functions check on the individual weapons, M2 machine guns, and MK-19?		

Scoring

I-22. For each "go" rating, 5 points will be awarded, for a maximum 15 points. For each "no go" rating, 0 points will be awarded.

TASK 7: AFCS INITIALIZATION**Conditions**

I-23. Given a fully operational M109A6 howitzer, a SCP location, and an operational POC under field conditions, the section will conduct AFCS initialization.

Standards

I-24. Initialize the AFCS in order without error. Chief of section, gunner, or ATC must initialize the AFCS. AFCS must be checked by a second person who is safety certified.

Evaluation

Evaluation Check List	Go	No Go
1. Enter NET ACCESS DATA and NET ADDRESS DATA IAW battery SOP. This information will be standard within the battery and should not change.		
2. Enter SET DATE/TIME; time will be requested from the POC. POC will give "mark".		
3. Request initialization in BCS DATA TRANSFER.		
4. Enter MAP/DATUM.		
5. Execute NAV UPDATE. Two individuals must verify data before USE ALL key is used. Sections will record easting, northing, and altitude.		
6. Select AMMO INVENTORY, EDIT CURRENT AFCS if you are going to input ammunition on hand. Select EDIT BCS PROVIDED if you are going to use ammunition inventory which POC has sent to AFCS. If ammunition is not present at the time of initialization select FINISHED. When inputting ammunition, physically look at the square weights. When inputting lot, use the battalion standard lot outlined in the TSOP.		
7. Enter PROP TEMP using powder temperature gauge which has been placed in a propellant charge for 10 minutes. If propellant has not been received use tube temperature in SETUP AND INFORMATION screen. ALERT TIME will be set at 1 hour. When one of the following exists, powder temperature will be updated: <ul style="list-style-type: none"> a. Initial occupation and before PIECE STATUS is sent to the POC. b. Whenever PROP TEMP ALERT displays. c. As directed by the POC. d. If type propellant is changed, section will put powder temperature gauge in the propellant which is to be shot. Wait 5 minutes before updating and then send PIECE STATUS to POC. e. If powder temperature changes when updating powder temperature, PIECE STATUS will be sent to POC. 	— — — — —	— — — — —
8. Enter MVV ROUNDS (1-9).		
9. Enter 2 minutes for TOT RESPONSE		
10. Enter 300 mils for LOAD ELEVATION. (This is only until safety "T" is received.)		

Evaluation Task 7: AFCS Initialization (Continued)

11. Enter SECTOR OF FIRE, left limit sector of fire, center sector of fire, and right limit sector of fire. This information will be given to the POC.		
12. Select CANCEL to display SECTION IN ORDER screen.		

Scoring

I-25. If all "go" ratings were awarded, the score for the task is 30 points. For a "no go" rating, 0 points will be awarded for this entire task.

PHASE III: OCCUPATION

TASK 8: CONDUCT A TACTICAL MOVE TO A FIRING POSITION

Conditions

I-26. The section is conducting combat operations and receives an order that requires displacement.

Standards

I-27. Section must be in position at the prescribed time in order to conduct fire mission.

Evaluation

Evaluation Check List	Go	No Go
1. Receive movement brief from platoon leadership.		
2. Receive movement order from POC. (Manual movement order and sectors of fire may be given.)		
3. Verify move order and sectors of fire with POC on the voice net.		
4. Record and plot destination map and brief section.		
5. Maintain communications with higher (POC/platoon leadership).		
6. Ensure all equipment and ammunition are loaded and secured IAW load plans.		
7. Conduct move IAW movement brief.		
8. If NAV UPDATE is conducted while enroute, SCP data will be recorded. COS tells driver to record and track mileage after NAV UPDATE.		
9. Defend against ground attack while moving.		
10. Defend against air attack while moving.		

Scoring

I-28. For each "go" rating, 2 points will be awarded, for a maximum of 20 points. For each "no go" rating, 0 points will be awarded.

TASK 9: EMERGENCY MISSION**Conditions**

I-29. During movement to another PA, you receive a call for fire (fire mission). Your section must conduct an emergency fire mission. (You have departed your original PA.)

Standards

I-30. Section fires the mission IAW ARTEP 6-037-30-MTP.

Evaluation

Evaluation Check List	Go	No Go
1. COS receives mission, finds suitable location, stops, verifies location, and emplaces howitzer on the azimuth which is displayed on the AFCS screen.		
2. Gunner verifies direction using M2 compass (IAW TSOP).		
3. COS presses the ARRIVED key on AFCS.		
4. COS directs driver to release travel lock.		
5. Driver will raise the RPMs of the howitzer to 1,000 to 1,200 RPM and will record the fire mission on DA Form 4513-R.		
6. COS will activate servos and push LOAD key.		
7. COS and gunner will verify immediate crest along commanded deflection.		
8. COS responds and issues the fire commands.		
9. Number 1 man prepares ammunition by lot and shell/fuze combination. (Sets time if time fuze is used.)		
10. Gunner prepares announced propellant for fire mission.		
11. COS checks fuze for tightness and if time fuze is used checks time setting.		
12. Number 1 man will ram projectile (pushes manual control lever forward, holding lever for 4 seconds to allow full extension of rammer cylinder rod and proper seating).		
13. COS will verify charge before gunner loads in tube. Gunner will place charge in tube (red igniter pad facing the rear) and announce "CHARGE, I SEE RED." Gunner will then announce "CLOSING" and lift the breech operating handle causing the breech to close. Gunner will then ensure witness marks align and announce "WITNESS MARKS ALIGNED".		
14. COS will press LAY key and announce "LAY LIGHT IS LIT, ACTUAL AND COMMAND DEFLECTION AND QUADRANT ARE WITHIN TOLERANCE (+/- 0.9 mils), AND NO WARNING MESSAGE IS PRESENT". Gunner will check all three things and announce VERIFIED. (If it is a high angle fire mission, the command to PRIME will be given before pressing the LAY key.) Gunner will announce "CHECK FIRING" if a violation of the above step occurs or data does not match.		
15. COS will command "PRIME". Number 1 man will prime.		
16. COS will command "HOOK UP". Number 1 man will hook up.		

Evaluation Task 9: Emergency Mission (Continued)

17. COS will command "FIRE" and Number 1 man will fire (if it is AMC, COS waits until the command is given to fire over the AFCS).		
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Scoring

I-31. For each "go" rating, 3 points will be awarded, for a maximum of 51 points. For each "no go" rating, 0 points will be awarded.

TASK 10: DELIBERATE OCCUPATION**Conditions**

I-32. The section is occupying a new firing position that has been reconnoitered and set up by the GSG.

Standards

I-33. Establish firing capability without error IAW ARTEP 6-037-30-MTP.

Evaluation

Evaluation Check List	Go	No Go
1. COS may have to do NAV UPDATE at entrance point as per platoon leader instruction. SCP data will be recorded on DA Form 4446 (not part of 2 minute occupation time). COS tells driver to record and track mileage after NAV UPDATE.		
2. Platoon occupies position area, wingmen insure intervisibility with center howitzer (IAW TSOP).		
3. COS directs driver to orient howitzer on center sector (+/-50 mils) (2 minute time starts when first howitzer stops) and emplace spades if needed.		
4. Howitzer may need to wait 30 seconds before doing step 5 (if NAV UPDATE has not been conducted within the last 5 miles wait the 30 seconds).		
5. COS presses the ARRIVED key on AFCS.		
6. COS directs driver to release travel lock.		
7. COS elevates tube to MAX TUBE ELEVATION and selects USE TUBE POSITION.		
8. COS and gunner conduct SITE DATA.		
9. COS updates POWDER TEMP in AFCS.		
10. COS sends PIECE STATUS to POC.		
11. Number 1 man prepares HE/PD in ready rack while steps 4 through 9 are being conducted.		
12. COS directs crew to perform prefire checks.		
13. Gunner verifies boresight with the M140.		
14. COS directs section to do position improvement.		
15. Establish an aiming point. (DAP during day time operations if one can be used. Collimator at night or during the day if no DAP is available).		
16. Construct range cards and establish survivability movement plan as directed by PLT SGT.		
17. Conduct verification mission with POC (read back CHARGE, TI if time is set, DF, and QE). (Only if there is a significant database change.)		
18. COS will receive, record, and read back to POC safety T information. COS will input MAX QE off the safety T in MAX TUBE ELEVATION, TYPE NEW VALUE.		

Evaluation Task 10: Deliberate Occupation (Continued)

20. COS will input MIN QE as announced by POC and record charge to be fired as required.		
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Scoring

I-34. For each "go" rating, 5 points will be awarded, for a maximum of 100 points. For each "no go" rating, 0 points will be awarded.

TASK 11: FIRE MISSIONS**Conditions**

I-35. You have completed the occupation of a new firing position and reported to the POC that you are RTF. You will conduct indirect fire missions as sent from the POC.

Standards

I-36. The howitzer section is ready to fire within 30 seconds (45 seconds for high angle, 1 minute for Copperhead inspection of the round) after receipt and acknowledgement of the fire mission.

Evaluation

Evaluation Check List-Four Missions: High Angle Fire For Effect (FFE), Low Angle FFE, Priority Target, and Low Angle Adjust	Go	No Go
1. COS operates the AFCS and processes the fire mission.		
2. COS responds and issues the fire commands.		
3. Driver will raise the RPMs of the howitzer to 1,000 to 1,200 RPM and will record the fire mission on DA Form 4513-R.		
4. COS will activate servos and push LOAD KEY.		
5. Number 1 man prepares ammunition by lot and shell/fuze combination (sets time if time fuze is used).		
6. Gunner prepares announced propellant.		
7. COS checks fuze for tightness and if time fuze is used checks time setting.		
8. Number 1 man will ram projectile (pushes manual control lever forward, holding lever for 4 seconds to allow full extension of rammer cylinder rod and proper seating).		
9. COS will verify charge before gunner loads in tube. Gunner will place charge in tube red igniter pad facing the rear and announce "CHARGE, I SEE RED". Gunner will then announce "CLOSING" and lift the breech operating handle causing the breech to close. Gunner will ensure witness marks align and announce "WITNESS MARKS ALIGNED".		
10. COS will press LAY key and announce "LAY LIGHT IS LIT, ACTUAL AND COMMAND DEFLECTION AND QUADRANT ARE WITHIN TOLERANCE (+/- 0.9 mils) AND NO WARNING MESSAGE IS PRESENT". Gunner will check all three things and announce VERIFIED. (If it is a high angle fire mission, the command to PRIME will be given before pressing the LAY key.) Gunner will announce "CHECK FIRING" if a violation of the above steps occurs or if data does not match.		
11. COS will command "PRIME". Number 1 man will prime.		
12. COS will command "HOOK UP". Number 1 man will hook up.		
13. COS will command "FIRE" and Number 1 man will fire. (If it is AMC, COS waits until the command is given to fire over the AFCS.		

Scoring

I-37. If all steps are graded as a "go", the section will receive 50 points for each mission (High Angle FFE, Low Angle FFE, Priority Target, and Low Angle Adjust). For a "no go" rating, 0 points will be awarded for the mission. Note: If any unsafe data is fired, the section will receive 0 points for the entire mission.

TASK 12: MISFIRE PROCEDURES**Conditions**

I-38. During firing, your section experienced a misfire. You have only fired 2 rounds prior to the misfire so you have a cold tube.

Standards

I-39. Perform misfire procedures IAW the TM without error, observing all warnings listed for cold tube weapon.

Evaluation

Evaluation Check List	Go	No Go
1. Did the number 1 cannoneer announce misfire?		
2. Did the number 1 man wait 2 minutes prior to removing the primer?		
3. Was the primer replaced if needed?		
4. Was the firing mechanism repaired or replaced as needed?		
5. Was the weapon fired after corrective action was taken?		
6. Were all warnings listed in the TM followed?		

Scoring

I-40. For each "go" rating, 5 points will be awarded, for a maximum of 30 points. For each "no go" rating, 0 points will be awarded.

TASK 13: SURVIVABILITY MOVE**Conditions**

I-41. The section is conducting tactical operations. One, a pair, or a platoon of howitzers is required to displace IAW the TSOP or tactical guidance to provide fires in support of maneuver forces and increase survivability.

Standards

I-42. Sections will load all section equipment, maintain communications with the control element, and move to another firing position within the PA.

Evaluation

Evaluation Check List	Go	No Go
1. When it has been determined to move, section will ensure all equipment and ammunition are loaded and secured.		
2. Senior COS will tell wingmen where they are moving.		
3. COS directs driver to put up travel lock, COS stores tube in travel lock, and driver locks travel lock. Stows spades if emplaced.		
4. Sections move to new position.		
5. COS pushes ARRIVED key.		
6. COS and gunner will do SITE DATA.		
7. COS will direct section to perform prefire checks.		
8. COS will update POWDER TEMP if needed.		
9. COS will send PIECE STATUS to POC.		
10. COS directs section to establish an aiming reference point.		
11. Number 1 man prepares HE/PD in ready rack while steps 5 through 10 are being conducted.		

Scoring

I-43. For each "go" rating, 5 points will be awarded, for a maximum of 55 points. For each "no go" rating, 0 points will be awarded.

PHASE IV: DEGRADED OPERATIONS

I-44. Note for evaluator to read to the COS: During movement to your next position your AFCS has gone out. You will have to occupy using degraded operations. Do not shut down your AFCS.

TASK 14: OCCUPATION

Conditions

I-45. During your movement to this location your AFCS has gone out (don't shut the AFCS down). You will have to occupy and fire missions in a degraded operations mode.

Standards

I-46. The section establishes a firing capability and prepares to accept fire missions and deliver fires.

Evaluation

Evaluation Check List	Go	No Go
1. The howitzer has lost electrical power.		
a. Notify the POC.	—	—
b. Limited electrical power from the M992A1 APU provides enough power for AFCS operation only (if FAASV is not available, you must use step e through j).	—	—
c. Manually elevate and traverse the tube.		
d. Manually ram projectile.	—	—
e. Use reciprocal lay, aiming circle, or compass laying technique.	—	—
f. Use spades.	—	—
g. Use DAP or collimator.	—	—
h. Manually elevate and traverse the tube.	—	—
i. Receive firing data from adjacent howitzer by wire.	—	—
j. Operate travel lock.	—	—
2. Receive firing data from the POC over a voice net.		
a. Notify the POC.	—	—
b. Use spades.	—	—
c. Receive firing data from the POC over a voice net.	—	—
d. Lay the howitzer with the gunner's control handle.	—	—
e. Use DAP or collimator.	—	—
f. If moving, navigate manually to destination, use another howitzer to provide location and for reciprocal lay.	—	—

Evaluation Task 14: Occupation (Continued)

3. The howitzer has no digital communication. a. Notify the POC. b. Collocate within 30-50 meters of operational gun and use operational gun's data or determine firing data in the POC (this method is slower than collocation with an operational gun, but more accurate). c. Use a voice net for fire direction. COS can move W18 cable from digital radio to voice radio and change frequency and frequency hopping in radio. d. Manually input data into the AFCS. e. Report rounds complete.	— — — — —	— — — — —
4. The navigation system is inoperative. a. Notify the POC. b. The POC provides firing data to the howitzer. c. The POC can send another howitzer to get a more accurate position or use hasty survey techniques. d. Use a DAP or collimator.	— — — —	— — — —
5. The howitzer has lost hydraulic power. a. Notify the POC. b. Load, traverse, and elevate manually according to the procedures in the current -10 series TM.	— —	— —
6. The gun drive servos are inoperative. a. Notify the POC. b. Lay with the chief of section hydraulic control handle. c. Lay manually using the gunner's elevating hand wheel.	— — —	— — —
7. The howitzer has lost voice radio communications. a. Notify the POC. b. Use wire to an adjacent howitzer. c. Use the FAASV's radio. d. Use digital net as a voice and digital net.	— — — —	— — — —
8. The transmission, final drive, or engine is inoperative. a. Notify the POC. b. Tow the howitzer to a subsequent position using the FAASV and use the APU to power AFCS. c. Continue firing until repaired or replaced.	— — —	— — —

Scoring

I-47. If all "go" ratings are received in a subtask, the section will be awarded 10 points each for a maximum of 80 points. For any "no go" rating in the subtask area, 0 points will be awarded for that subtask. Note: If any unsafe conditions exist (i.e., howitzer not laid properly or collimator improperly set) the section will receive 0 points for this task.

TASK 15: USE OF CONVEYOR

Conditions

I-48. Due to the howitzer degraded mode, the COS has decided to use mated operations. The FAASV will be backed up to the howitzer and the conveyor is to be put into operation.

Standards

I-49. Extend and operate conveyor IAW TM without error.

Evaluation

Evaluation Check List	Go	No Go
1. Was the conveyor properly extended and put into operation?		

Scoring

I-50. For a "go" rating, 10 points will be awarded. For a "no go" rating, 0 points will be awarded.

TASK 16: FIRE MISSIONS IN DEGRADED MODE**Conditions**

I-51. Your howitzer AFCS has gone out and you are required to fire missions in the degraded operations mode. Your howitzer is conducting combat operations and has established a firing capability without the aid of the Paladin's automation.

Standards

I-52. The howitzer is ready to fire within 45 seconds (60 seconds for high angle, 1 minute for Copperhead) after the receipt of quadrant.

Evaluation

Evaluation Check List	Go	No Go
1. The POC issues safety "T" to COS which he records on his safety "T" (if applicable).		
2. The POC issues the fire commands.		
3. Howitzer section responds to the POC's fire commands.		
4. The COS announces the fire commands.		
5. Driver will raise the RPMs of the howitzer to 1,000 to 1,200 RPM and will record the fire mission on DA Form 4513-R.		
6. The COS ensures section personnel follow commands. <ul style="list-style-type: none"> a. "DO NOT LOAD"-Take all necessary actions to prepare for firing without loading; report "NUMBER __-IS LAID" when complete. b. "AT MY COMMAND"- Take all necessary action to prepare for firing, report "NUMBER __ IS READY" when complete. c. "AZIMUTH"-Traverse weapon immediately to required deflection. d. "SPECIAL CORRECTIONS"-Record and apply special corrections for DF, QE, and FZ setting. Upon end of mission return to standard corrections. e. "(LEFT) (CENTER) (RIGHT) SECTOR"- Apply sector corrections. Upon end of mission return to standard corrections. f. "CANCEL TERRAIN CORRECTIONS" -Set gunner's aid counters to 0. Upon end of mission return to standard corrections. 	— — — — —	— — — — —
7. Number 1 man prepares ammunition by lot and shell/fuze combination (Set time if time fuze is used).		
8. COS checks fuze for tightness and if time fuze is used checks time setting.		
9. Number 1 man will ram projectile (pushes manual control lever forward, holding lever for 4 seconds to allow full extension of rammer cylinder rod and proper seating).		
10. Number 1 man prepares propellant which was announced.		
11. COS checks the proper propellant before number 1 man places it in the tube.		

Evaluation Task 16: Fire Missions in Degraded Mode (continued)

12. Number 1 man will load charge in tube with red igniter pad facing the rear of the tube announcing, "CHARGE _, I SEE RED". Number 1 man will then announce "CLOSING" and lift the breech operating handle causing the breech to close. Number 1 man will ensure witness marks align and announce "WITNESS MARKS ALIGN".		
13. At the same time the gunner set announced DF on the pantel and set the QE on the elevation quadrant.		
14. The gunner traverses onto the aiming point.		
15. The gunner elevates to the announced QE.		
16. Gunner levels all bubbles and announces "SET" and "READY".		
17. The COS verifies data, bubbles, and sight picture.		
18. COS will command, "PRIME". Number 1 man will prime.		
19. COS will command, "HOOKUP". Number 1 man will hook up.		
20. COS will command, "FIRE" and number 1 man will fire. (If it is AMC, COS waits until the command is given to fire by POC).		
21. COS is responsible to ensure the following special instructions are executed or computed correctly if given by the POC:		
a. "ZONE FIRE"-Correctly compute required QE, fire announced QE first and subsequent QE in any order.	—	—
b. "SWEEPING FIRE"-Correctly compute required DF, fire announced DF first and subsequent DF in any order.	—	—
c. "SWEEP AND ZONE"-Correctly compute required QE and DF, fire announced DF and QE first, and all combinations of DF and QE.	—	—
d. "CONTINUOUS FIRE"-Load and fire as rapidly as possible consistent with maintenance of accuracy and sustained rate of fire of howitzer. Continue until command to CHECK FIRING or CEASE LOADING.	—	—
e. "FIRE AT WILL"-Howitzer COS controls howitzer fires as the situation and target necessitate.	—	—
22. COS ensures that establishes safety principles are observed during firing.		

Scoring

I-53. If all steps are graded as a "go", the section will receive 100 points. 0 points will be awarded for any "no go". If any unsafe data is fired, the section will receive 0 points for that mission. 1 point will be deducted for each second over the allowed time not to exceed 20 points.

TASK 17: DIRECT FIRE**Conditions**

I-54. A stationary target is positioned 400-800 meters from the howitzer. The COS is given a series of 3x5 cards that requires the section to use direct laying procedures.

Standards

I-55. Engage a target in the direct fire mode as outlined in the TM within time and safety standards. Note: Central lay method will be used for this task.

Evaluation

Standards	Scoring Direct Fire Penalty	Max Point Cut
The COS issues correct and complete fire commands within 20 seconds of the receipt of each card, and section members announce correct commands.	1 point deducted for each omitted or incorrect fire command, or for each command that takes over 20 seconds.	5
The announced lead and range or elevation are set off.	6 points deducted for every incorrect lead, range, or elevation.	6
All bubbles are centered when howitzer is fired (first round only).	2 points deducted for each bubble not centered.	4
The time from the last digit of range or elevation until the howitzer is fired is 20 seconds or less.	1 point deducted for each second over 20.	5

Scoring

I-56. Each situation card is worth a total of 10 points. Each section will be graded on 4 separate situation cards for a total of 40 points.

Phase V: NBC OPERATIONS**TASK 18: ASSUME MOPP LEVEL 2****Conditions**

I-57. Enroute to this location you crossed a contaminated area.

Standards

I-58. Operate in a contaminated environment in MOPP level 4.

Evaluation

Evaluation Check List	Go	No Go
1. Did all section members have all required MOPP gear?		
2. Were all section members in the proper MOPP level?		
3. Was MOPP gear worn properly?		
4. Did the section stay in MOPP throughout the mission?		
5. Did section take proper precautions prior to crossing contaminated area?		

Scoring

I-59. For each "go" rating 2, points will be awarded, for a total of 10 points.
For a "no go" rating, 0 points will be awarded.

TASK 19: NBC OCCUPATION**Conditions**

I-60. Having crossed a contaminated area you must provide fire support prior to going to a decontamination site.

Standards

I-61. Operate in a contaminated environment in MOPP level 4 performing AFCS update and occupation.

Evaluation

Evaluation Check List	Go	No Go
1. Did the section stay in MOPP during occupation?		
2. Did the COS update his AFCS at the SCP prior to occupation?		
3. Did the COS follow proper procedures during occupation?		
4. Was the occupation accomplished within time standards?		

Scoring

I-62. For each "go" rating, 5 points will be awarded, for a total of 20 points. For any "no go" rating, 0 points will be awarded.

TASK 20: FIRE MISSION IN NBC EQUIPMENT

Conditions

I-63. While in MOPP you must conduct an indirect fire mission.

Standards

I-64. Conduct indirect fire mission in MOPP level 4, preparing ammunition for firing, verifying data, issuing fire commands, and firing safe announced data.

Evaluation

Evaluation Check List	Go	No Go
1. Did the section stay in MOPP?		
2. Was the round properly prepared for firing?		
3. Did the COS compare and verify all data?		
4. Did COS announce firing commands?		
5. Was proper data fired?		

Scoring

I-65. For each "go" rating, 3 points will be awarded, for a total of 15 points. For any "no go" rating, 0 points will be awarded. If any unsafe data is fired, the section will receive 0 points for this task.

TASK 21: UTILIZING THE M256 KIT**Conditions**

I-66. Having completed your fire missions you must determine the type of contamination if any. The COS has instructed the section to utilize a M256 kit.

Standards

I-67. Use M256 Kit without error to determine and report type of contamination present in area.

Evaluation

Evaluation Check List	Go	No Go
1. Did the section have M256 kit readily available?		
2. Did the section have personnel identified to conduct the test?		
3. Did the section follow proper procedures for conducting the test?		
4. Was the proper report/findings sent to the POC?		
5. Did the section remain in MOPP 4 during the test?		

Scoring

I-68. For each "go" rating, 2 points will be awarded for a total of 10 points. For any "no go" rating, 0 points will be awarded.

Phase VI: NIGHT OPERATIONS**TASK 22: NIGHT OCCUPATION****Conditions**

I-69. During the hours of darkness, your section received movement orders to relocate to a new position.

Standards

I-70. Occupy new position under cover of darkness and perform procedures IAW TM without error.

Evaluation

Evaluation Check List	Go	No Go
1. Did the section update the AFCS prior to occupying the firing area?		
2. Did the COS align his howitzer with the azimuth of fire (+/- 10 mils)?		
3. Did the COS press ARRIVED key to send location to POC?		
4. Did the COS verify direction by using the M2 compass?		
5. Did the COS determine site data?		
6. Did the COS input min and max QE?		
7. Did the COS verify firing limits?		
8. Were prefire checks completed IAW -10 manual?		
9. Did gunner establish an alternate aiming point and record it on the gunner's reference card?		
10. Was position improvement done as time permits?		

Scoring

I-71. For each "go" rating, 3 points will be awarded, for a maximum of 30 points. For a "no go" rating, 0 points will be awarded.

TASK 23: CONDUCT NIGHT FIRE MISSIONS**Conditions**

I-72. You have completed the occupation of a new firing position and reported to the POC that you are RTF. You will conduct indirect fire missions as sent from the POC.

Standards

I-73. The howitzer section is ready to fire within 30 seconds (45 seconds for high angle, 1 minute for Copperhead excluding inspection of the round) after receipt and acknowledgment of the fire mission.

Evaluation

Evaluation Check List-Four Missions:	Go	No Go
1. COS operates the AFCS and processes the fire mission.		
2. COS responds and issues the fire commands.		
3. Driver will raise the RPMs of the howitzer to 1,000 to 1,200 RPM and will record the fire mission on DA Form 4513-R.		
4. COS will activate servos and push LOAD KEY.		
5. Number 1 man prepares ammunition by lot and shell/fuze combination (sets time if time fuze is used).		
6. Gunner prepares announced propellant.		
7. COS checks fuze for tightness and if time fuze is used checks time setting.		
8. Number 1 man will ram projectile (pushes manual control lever forward, holding lever for 4 seconds to allow full extension of rammer cylinder rod and proper seating).		
9. COS will verify charge before gunner loads in tube. Gunner will place charge in tube red igniter pad facing the rear and announce "CHARGE, I SEE RED". Gunner will then announce "CLOSING" and lift the breech operating handle causing the breech to close. Gunner will ensure witness marks align and announce "WITNESS MARKS ALIGNED".		
10. COS will press LAY key and announce "LAY LIGHT IS LIT, ACTUAL AND COMMAND DEFLECTION AND QUADRANT ARE WITHIN TOLERANCE (+/- 0.9 mils) AND NO WARNING MESSAGE IS PRESENT". Gunner will check all three things and announce VERIFIED. (If it is a high angle fire mission, the command to PRIME will be given before pressing the LAY key.) Gunner will announce "CHECK FIRING" if a violation of the above steps occurs or if data does not match.		
11. COS will command "PRIME". Number 1 man will prime.		
12. COS will command "HOOK UP". Number 1 man will hook up.		
13. COS will command "FIRE" and Number 1 man will fire. (If it is AMC, COS waits until the command is given to fire over the AFCS.		

Scoring

I-74. If all steps are graded as a "go", the section will be awarded 100 points for the mission. For each "no go" rating 0 points will be awarded. Note: If any unsafe data is fired, the section will receive 0 points for the mission.